

W5YI

America's Oldest Ham Radio Newsletter

REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable.

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VECs Hold Annual Conference With FCC Officials

The 2000 edition of the *National Conference of VECs* got underway on Friday, July 21st as NCVEC Chairman Win Guin, W2GLJ called the meeting to order. There were 11 VEC organizations in attendance, (ARRL, CAVEC, GEARS, GLAARG, LAUREL, MRAC, SANDARC, Sunnyvale, WCARS, W4VEC, and the W5YI-VEC groups.) representing more than 98% of all examinations administered in the Amateur Service. Not in attendance were delegations from the Anchorage, Jefferson and MOKAN VECs.

A VEC acts as the link between the volunteer examiner (VE) community and the FCC. Their function is to approve volunteer examiners and to provide testing guidance, license examination materials and electronic filing of license applications for their accredited VE teams.

The VEC System consists of 14 VEC organizations who oversee the activities of an estimated 3000 VE teams and some 35,000 accredited VEs. They meet annually with Washington DC and Gettysburg PA Federal Communication Commission officials to discuss and agree on Amateur Service examination and licensing issues. Last year's meeting was canceled, however, since the amateur community was waiting for the FCC to release the restructuring *Report and Order*.

Meeting started at 8:00 a.m., Friday

NCVEC Chairman Win Guin welcomed everyone and explained the agenda. The minutes of the

previous conference were accepted unanimously. Next came the committee reports.

Question Pool Committee Chairman Ray Adams W4CPA said that the timing of the newly restructured Amateur Service came as a surprise to him and other members of the QPC. The restructuring *Report and Order* was released on December 30, 1999 with an implementation date of April 15, 2000. That gave the QPC an extremely short time to overhaul the existing five question pools (Novice, Technician, General, Advanced and Extra Class) into three pools: (Technician - Element 2, General - Element 3 and Extra Class - Element 4.)

Much had to be done before April 15th in order for the various VE teams to be able to administer the new examinations. The QPC decided to take one week each (during January 2000) to slim down the five question pools to three. This was basically done by combining the old Novice and Technician pools into a new Element 2, the General Class questions were used as the basis of the new Element 3 and the old Advanced and Extra Class questions found their way into the new Element 4. Many questions which were made obsolete by the new rules were deleted and several new questions added reflecting the new rules. The new question pools were released to the public on February 1, 2000. This allowed time for the various VECs and license preparation publishers to prepare new examinations and study material.

The QPC will now continue its routine revision

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of each question pool. One pool will be revised annually with the Extra Class (Element 4) being first. The new Extra Class pool will be released to the public on December 1, 2001 and will be implemented in all Element 4 examinations administered on and after July 1, 2002. The Technician and General Class pools will be revised in successive years.

VEC Rules committee chairman, Fred Maia reported that all of the major features requested by the VECs in their formal comments relative to a newly restructured Amateur Service were accepted by the FCC. These included three license classes and a maximum Morse code exam speed of five words-per-minute. He also discussed his meeting with Washington DC FCC officials in October 1998. Fred said what was not anticipated was the huge license processing logjam caused by upgrading amateurs passing the old Element 3B (General) and Element 4B (Extra) and then using the CSCE's toward the new General and Extra Class exams after April 15th.

VEC Guidelines Committee Chairman, Michele Cimbala WK3X went over all of the revisions and new additions to the VEC Instructions. These non-binding instructions act as standardized guidelines for each VEC in the administration of their organization. RC Smith W6RZA wanted legally binding wording in Part 97 requiring VEs to certify that they obeyed the rules while giving an exam. A petition to the FCC along these lines is being considered. Fred Maia W5YI suggested that it would be a good idea if all VEC organizations used exactly the same forms and procedures. Win Guin said he was disappointed that the NCVEC had not been able to set uniform standards for test administration.

ARRL's Bart Jahnke W9JJ led a discussion on standardizing the 5-wpm Morse code test. He said that for nearly 12 years, the ARRL has used an 18 wpm character speed on its 5 and 13 wpm exams. "With 5 wpm now being the only exam speed, it may be time to use a slower character speed," he said. He also questioned whether the VECs should continue with a multiple choice Morse code answer format.

Laurel's Bob Busch moved that all VECs support the format of 7 out of 10 correct fill-in-the-blank (in addition to one minute solid copy) and exclude the multiple-choice format. The VECs ultimately agreed on the following standards for all 5-wpm code examinations. (1.) Tone: 700 -1000 hertz frequency, (2.) Only Farnsworth 13 to 15 wpm character speed spacing, (3.) Only 25 consecutive character count and fill-in-the-blank exam answer formats will be used. (4.) Passing the fill-in-the-blank format consists of answering seven out of ten questions about the transmitted telegraphy exam text. (5.) Both grading methods will be used. If the applicant fails to answer 7 out of 10 questions, then the VE team will look for 25 consecutive characters on the applicant's

code copy. (6.) No multiple choice code exams will be allowed. (7.) The new code exam standards will be implemented by all VE teams on or before July 1, 2001.

FCC presentations

In attendance at the afternoon session from the Commission's Gettysburg facility were FCC staffers Steve Linn, Judy Dunlap, Larry Wiekert, Donna Scott, Darlene Reeder, and Riley Hollingsworth. Bill Cross (author of the FCC's restructuring *Report and Order*) and John Borkowski, Assistant Chief of the Wireless Telecommunications Bureau's Public Safety and Private Wireless Division drove in from Washington, DC. Bill Cross W3TN acted as moderator.

He and the FCC staff responded to several questions from the VECs. These questions involved electronic filing software errors and problems, real time processing of Amateur Radio license data and the fact that the Netscape browser and not the Internet Explorer must be used for interactive filing.

Just what is CORES?

Judy Dunlap heads up the FCC's data processing effort at Gettysburg. She and Steve Linn discussed the new *Commission Registration System* (CORES) and FCC Registration Number (FRN) that is in the process of being implemented in all radio services.

CORES is a web-based, password-protected, registration system that assigns a unique 10-digit FCC registration number (FRN) for use when doing business with the FCC. Once implemented, everyone filing an application must identify using the FRN. We were told that existing TIN (Taxpayer Registration Numbers) will automatically feed into CORES which will generate a 10-digit FRN. It will not replace the Licensee ID - the 9 character identification number beginning with the letter "L."

Eventually, the FRN will be mandatorily used in place of a TIN. All applicants will receive a CORES registration number (the FRN) automatically by mail if they were registered in the Universal Licensing System prior to June 22, 2000. All amateur radio operators are automatically registered in ULS if they have submitted their Social Security Number to the FCC - such as part of a license renewal, upgrade, change of address or new license or if they specifically registered in ULS.

The FCC is in the process of phasing in CORES and the Amateur Service (which currently comes under the Universal Licensing System, ULS) is not yet required to use FRNs. It will be many months before its use becomes mandatory.

Bill Cross said that the *Club Call Sign Administrator* program was temporarily on hold pending completion of other FCC projects. He added that a change in the Telecommunications Act made by Congress (Public Law 104-66) struck down the formula used by the FCC to

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determine the maximum amount that may be charged by the VEC System (reimbursed) for Amateur Radio license examinations. This will permit VECs to charge a higher license examination fee which is more in line with actual costs.

Amateur Radio Enforcement

Riley Hollingsworth emphasized that enforcement of amateur service rules is now -- and will continue to be -- a permanent part of the FCC's enforcement effort. He said VEs and VECs have certain responsibilities (in Part 97) to verify applicant data. Documentation related to this responsibility is very important.

There also was a discussion regarding the dropping of the Technician Plus ("P") designator in the FCC's database. There was a feeling that it could cause a problem whereby Official Observers would not be able to identify (from the FCC database) Technicians licensed since April 15th as being eligible to operate on 10 meters. So far, it has not been a problem.

Bill Cross said it is up to the licensee to prove their HF eligibility by producing a CSCE showing they have passed a code exam if questioned about it. He added that it is up to the VEs to determine whether or not an applicant passes or fails, not the VEC.

All NCVEC officers and committees were reelected for the coming year.

GENERAL AND EXTRA CLASS AMATEURS SKYROCKET

While the total number of radioamateurs has not increased significantly (a mere one half of one percent), the number of General and Extra Class amateurs has surged! There are 15,322 (20%) more Extra Class amateurs than a year ago, 17,806 (16%) more Generals ...a total of 33,128 upgrades! This, of course, was caused by the elimination of the 13 and 20 words-per-minute telegraphy examination. The increases come at the expense of the Advanced and Tech Plus Class.

Here is a comparison of the total number of amateurs by license class over the past four years. Figures are as of the end of June.

License Class	6/30 1997	6/30 1998	6/30 1999	6/30 2000
Extra	73737	74274	75113	90435
Advanced	107024	104509	103705	90935
General	116629	112977	110838	128644
Tech. Plus	139608	135737	134161	112046
Technician	174924	186458	197681	208834
Novice	66551	60125	54502	48441
Total:	678473	674080	676000	679235

AMATEUR RADIO STATION CALL SIGNS

...sequentially issued as of the first of July 2000:

Radio District	Group A Extra	Group B Advanced	Group C Tech/Gen.	Group D Novice
0 (*)	AB0NY	KI0RV	(***)	KC0IKP
1 (*)	AA1WM	KE1LY	(***)	KB1FLA
2 (*)	AB2JS	KG2RM	(***)	KC2GQS
3 (*)	AA3VE	KF3DE	(***)	KB3FGF
4 (*)	AF4ZX	KV4FF	(***)	KG4IMR
5 (*)	AC5ZB	KM5XD	(***)	KD5KV0
6 (*)	AD6QW	KR6ER	(***)	KG6CILK
7 (*)	AC7HS	KK7WK	(***)	KD7JRW
8 (*)	AB8IG	KI8JX	(***)	KC8OZR
9 (*)	AA9ZO	KG9RA	(***)	KB9WQJ
N. Mariana	NH0W	AH0BB	KH0JR	WH0ABN
Guam	(**)	AH2DN	KH2UX	WH2ANX
Hawaii	WH7Z	AH6QK	KH7ZZ	WH6DGJ
Am.Samoa	AH8T	AH8AI	KH8DO	WH8ABF
Alaska	AL0Z	AL7RQ	KL0XV	WL7CVE
Virgin Isl.	(**)	KP2CP	NP2KW	WP2AIN
Puerto Rico	WP3G	KP3BL	WP3HL	WP4NOT

* = All 1-by-2 & 2-by-1 call signs have been assigned.

** = All 2-by-1 call signs have been assigned.

*** = Group "C" (N-by-3) call signs have now run out in all but the 1st and 3rd call district.

Note: New prefix numerals now being assigned in Puerto Rico (KP3/NP3), Hawaii (AH7/KH7) and Alaska (AL0/KL0)

[Source: FCC Amateur Service Database, Washington, DC]

We are not entirely sure that the following statistics for 2000 are totally accurate. We are still working on the software that develops these figures.

NEW AND UPGRADING AMATEUR STATISTICS

For the Month of June 1998, 1999 & 2000

License Class	New Amateurs			Upgrading Amateurs		
	1998	1999	2000	1998	1999	2000
Novice	58	64	0	0	0	0
Technician	1330	1370	2793	0	0	141
Tech Plus	171	151	0	297	271	0
General	27	22	125	380	219	9498
Advanced	2	2	0	239	240	0
Extra Class	3	1	42	146	142	6005
Club/Empty	68	54	0	0	0	0
Total:	1659	1664	2966	1062	872	15644

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CUTTING EDGE TECHNOLOGY

■ **There are AAA, AA, C and D dry cell batteries.** But do you know why there are no size A and B batteries? The AA, C and D size designations originated in the early 1900's when battery-operated "valve" (tube-type) radio receivers were widely used.

Those receivers used "A" batteries (usually a lead-acid accumulator) to heat the filaments of the valves, while the "B" battery provided the high-voltage supply. New cells adopted other designations such as AA, C and D. You can still see "B supply" or B+ for the high voltage supply on present-day circuit diagrams.

All battery designations are now standardized internationally according to IEC86, a two-part standard published by the International Electrotechnical Commission in Geneva.

■ **How do liquid-crystal displays put up with the cold?** During winter months, outdoor-application LCDs (such as in gas pumps) can often slow down their response time because of low temperatures. This problem is eliminated with special LCD heaters -- transparent elements that keep the displays operating far above the ambient temperature. The heaters become dormant when the weather gets warmer.

■ **Astronomers must keep their infrared telescopes surgically clean.** Can you guess why? (The answer is elsewhere in this issue.)

■ **Lost parents? It's practically a given that families will get separated in an amusement park.** Rather than go to a lost-and-found area, you may soon be able to locate everyone in your group by simply running your wrist under a scanner at any park kiosk.

Visitors to Hyland Hills Water World in Federal Heights, Colo., are testing "ParkWatch" -- a wireless radar tracking device that is worn by family members. When you enter the park, you're given a RF identifying badge that looks and wears like a wristwatch. Everyone in your family or group receives the same unique ID number.

If you need to find them, simply go to a kiosk and scan your badge. A system of antennas throughout the park silently interrogates the badges of all the park guests and instantly displays the locations of everyone in your group on a video

monitor. The system is accurate to ten feet. Cost is \$3.00 per person.

■ **How sensitive are professional radio telescopes?** This might give you an idea: The huge dish antennas that you see on science programs amplify faint RF signals that travel anywhere from a few million miles away to as far as billions of light years. In the first 20 years since the start of radio astronomy, the total amount of radio-frequency energy collected by radio telescopes around the world was no stronger than the energy of one snowflake falling on the ground.

■ **Digital cameras are gathering steam.** Even though a billion rolls of 35mm film were sold last year, digital cameras are getting smaller and have more resolution, while falling in price. Over two million of the new cameras were sold in 1999. With the instant viewing of snapshots, saving them on Flash memory cards or diskettes, and sharing them with people over the Internet, drugstores may soon find themselves getting out of the photo-finishing business. More random electronic glitches may be on the way in many applications.

■ **Generally, the more complex a system is, the more likely something will go wrong with it.** Packing more electronic circuitry into one package (increasing circuit density) makes it more susceptible to random strikes by radiation. Alpha particles occur everywhere in nature as elements decay. Even solder can throw out such particles. Piercing an integrated circuit with no trouble at all, a single alpha particle can wreak havoc by switching on just one transistor at the wrong time. This can lead to random lock-ups of computer systems, incorrect data fields being stored in RAM, or inputs and outputs being turned on or off "by themselves."

■ **Today's data-gathering test equipment, such as digital counters and oscilloscopes, can keep statistics on groups of signals.** Rather than record waveforms or events manually, you can program these newest devices to do it for you. They can display statistics of recorded signals in bar-graph form or other formats.

■ **What's the best way to keep your wristwatch accurate?** Keep wearing it. The quartz crystal inside your digital watch relies on your body warmth to keep its frequency steady.

■ **For the most powerful circuit design, engineers can use SpiceFarm.** It's

a network of fast, powerful computers operating in parallel to examine operating parameters of complex electronic circuits. Electronics students often use SPICE (a software program to look at a circuit's behavior) on a single PC for simple circuits. But high-performance circuits with thousands of components can bog down an ordinary PC in such an application, so registered users of SpiceFarm can upload their information to the system over the Internet and "let the machine do the work." Results are returned to the users quickly.

■ **When do you NOT want to splice a fiber-optic cable?** When it could cause an explosion. Fusion splicing, a normally preferred method of joining optical fibers together, requires clean air; it's called fusion splicing because it uses a spark of high voltage to ionize the air gap between the fiber ends to melt and "glue" them together. A spark down in a manhole could ignite flammable gases. Mechanical splicing is used in such hazardous conditions.

■ **Ever look at a chemical refinery and ask, "How did they know where all those pipes would go?"** It's now easier than ever to design an industrial plant in three dimensions and prevent any "collisions" between pipes. One computer software package, called "SmartPlant Review," draws realistic mazes of pipes and conduits while architects and engineers are still deciding on the best placement for them.

■ **Remember those classic arcade video games, such as Pac-Man, Missile Command, Space Invaders, Space War, Tempest, Asteroids, Centipede, Tron, and all the rest?** You can buy your very own, if you look hard enough. Auctions take place often throughout the country and private collectors are always buying, selling and trading complete machines, replacement parts, and circuit boards. If you're new to this sort of hobby, a good place to get information is the Internet news group rec.games.video.arcade.collecting. Other arcade fans are always posting what they want to buy, sell, or trade. You can get repair tips and tricks for practically any favorite type of game, as well as Web site addresses for fascinating histories of the classic machines.

■ **Infra-red bulbs. Useful in surveillance situations,** infrared illuminators provide an invisible light source for IR cameras in complete (visual) darkness. At least one device, called "The Puck," contains 25 infra-red light-emitting diodes and

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can throw a beam as far as 40 feet. People can't see it, but video cameras can.

■ **A new method of tracing metal fatigue uses bursts of high-intensity light.** Pulsed thermography examines the heat given off by a metal or composite surface after a brief exposure to powerful light. Fast infra-red cameras can see the changes of thermal behavior in areas where cracks, corrosion, or leaks may be developing.

■ **Answer: Infrared telescopes are designed to detect extremely minute heat sources, particularly those of the most distant stars.** Every piece of matter in the universe emits heat. Even a speck of dust on a telescope lens generates heat, which the delicate infrared sensors will easily detect. Any extraneous source of heat creates false data, so that's why infrared telescopes must be kept as clean as possible.

■ **Still have some old reel-to-reel tapes? Better store them vertically, like books on a shelf.** This lets the hub in the center of the reel support the weight of all the tape, instead of the tape edges if the reel were stored flat. It's best to store them "tails out" -- that is, with the end of the tape on the outside of the reel. This avoids "print-through," or a pre-echo that would be faintly heard before loud passages of music. Print-through is caused by strong magnetic fields stored on the tape bleeding into surrounding tape layers on a reel. Archivists say the best environment for prolonged magnetic tape storage is about 70 degrees F, with about 40% relative humidity. Play back your tapes every few years to keep the pressure distribution even throughout.

■ **If you look at your electric bill this month and wonder where all the money goes,** it's probably through your air conditioner. On the average, we Americans spend about one-tenth of our gross income on paying our home utility bills. And about one half of the energy we use at home either heats it or cools it.

■ **Too much of a home-field advantage? Some opposing teams think so.** Crowd noise often drowns out a visiting football team's audible signals. Sound levels inside an enclosed basketball arena sometimes exceed that of a jet engine. The National Football League has actually been investigating complaints that some teams purposely feed extra crowd noise into their audio systems when it would work to their advantage.

■ **Trying to connect an old piece of equipment and can't find the manual?**

Check out www.technick.net. It contains cable pinouts for hundreds of different pieces of computer equipment: modems, video monitors, serial printers, parallel printers, disk drives, keyboards, etc. It supports information on dozens of different manufacturers, too: Amiga, Centronics, Macintosh, Radio Shack's Color Computer, and many more.

■ **Ever wonder how ultrasonic thickness gauges work?** They non-destructively measure the thicknesses of a material by measuring how long it takes a pulse to travel through it. Since different materials affect pulse transit time differently, the gauge's internal computer compares the result against known velocity factors. Tell the gauge what material you're measuring, and it displays its proper thickness.

■ **What is a ferrofluid?** It's a liquid that contains ferromagnetic (iron-based) particles. When you apply a magnetic field to it, the particles all align themselves in the same direction and change the fluid's viscosity. Ferrofluid is often found in high-end audio speakers. It also helps to smooth out vibrations in motor-control systems.

EMERGING COMMUNICATIONS

■ **Will all new TV sets soon be HDTV-equipped?** The *National Association of Broadcasters* wants the FCC to require television manufacturers selling new receivers in America to make them all compatible with high-definition TV signals. The NAB hopes that by making all new sets capable of viewing the new format, it will speed up purchasing and consumer acceptance of HDTV.

■ **"My cell phone is safer than your cell phone."** That big \$145 billion Florida judgement against big tobacco is impacting the cell phone business! The *Cellular Telecommunications Industry Association* is now requiring wireless phone manufacturers to submit RF radiation data -- called SARs for *Specific Absorbed Radiation* -- beginning this month. The information will be included with the product literature sold with the cell phone. Customers will be able to compare SARs on different cell phones. CTIA maintains that cell phones are safe but feels the "...manufacturers should be up front."

■ **"This cell phone shouldn't be working inside this tunnel..."** Well, normally, it wouldn't. It's probably getting help from a special "repeater" close to the underground roadway. One method of doing this uses special "radiating" RF cable, which is designed to act like an antenna. Ordinary coaxial cable is designed to keep radio waves inside an interior conductor, but radiating cable lets cell phone users maintain conversations throughout the length of the tunnel.

■ **The difference between an analog telephone line and a digital one could blow out a modem.** That's why it pays to check an unfamiliar jack with a telephone line tester. Several test equipment manufacturers offer low-cost, handheld devices that examine the voltages involved and quickly reveal the status of the line -- analog, digital, or dead.

■ **RingIt! simulates a telephone line.** The device, made by Digital Products, lets you test answering machines, fax machines, modems and, of course, telephones. The microprocessor-based piece of test equipment simulates the phone company's central office and provides dial tone, ringing simulator ...even Caller ID.

■ **"Webcasting" is the broadcasting of a radio station's signal out over the Internet.** It allows Net-connected people to listen to said station anywhere in America, as well as from other countries. In addition, workers inside large buildings which prevent RF signals from reaching antennas connect to radio stations through webcasting. But there's another surprising benefit to all this: we're listening to radio stations more. Studies show that people listening to a radio station through webcasting tend to listen for longer periods than if they just tuned in on an ordinary radio receiver.

■ **Macros programmed into remotes.** Xantech's new URC-2 universal remote control not only lets you operate the TV, VCR, DVD player, and everything else, but you can also program it to do a series of separate functions all at once -- by touching just a single button. By recording all of the separate steps as a macro, you can play back all of them at once later from just one key. Each button on the keypad can be programmed for up to 40 functions. This allows the URC-2 to be small enough to fit in one hand. And all of the buttons light up when you pick up the remote, so you can see them in the dark.

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COMPUTER INFO

■ **Is renting application software the wave of the future?** Pay-per-view software may be on the horizon for many home users as "always on" cable modems and DSL Internet connections proliferate.

A Fountain Valley, Calif., startup firm - www.personable.com - claims to be the world's first consumer Application Service Provider (ASP). Their service allows you to instantly access your own Windows 2000 virtual desktop on their servers, offering Microsoft Office 2000 Suites and other software already installed and ready to be used.

You select and rent the software you need, when you need it, and for however long you need to use it. It is available to you anytime and anywhere an Internet connection is available. Most individual use software subscriptions are available at \$9.95 per month. They even offer computer courses on how to use the applications you rent.

Microsoft's new "Rent-an-Application" program is to be aimed at Application Service Providers ...not consumers. Analysts say that over the next few years, software vendors will increasingly promote subscription-type licenses. An advantage of renting software is that you never have to upgrade the product. That's done by the ASP.

■ **Cooling a computer's hard drive is getting tougher.** To squeeze gigabytes of data into a hard drive, manufacturers make the internal disk platters spin as fast as 12,000 rpm. That generates a good deal of heat, and up until now the casing of the drive has been enough of a heat sink to dissipate it. Extra fans may soon appear on the fastest, largest-capacity hard drives; or we may even see some sort of liquid cooling.

■ **Hold on to your hats, video-gamers! Sony's newest home video-game system, PlayStation 2,** will have the capability to be connected to either analog TV sets or HDTV sets. Sony is already working on even more powerful video-graphic hardware: a future-generation graphics processor, just two years away, will contain four times as many transistors as a Pentium III microprocessor; and the processor being designed after that will contain 100 million transistors!

■ **Rejoice, artists! Now you can see what you're drawing on the com-**

puter, without having to keep your eyes locked on the screen. Wacom's PL-400 liquid-crystal display monitor can lay flat on a tabletop, and the graphics tablet integrated into the unit allows artists to draw directly onto the screen with a stylus. No more will a painter have to keep hand and eye motion separate. The PL-400 provides an approximate 8" x 10" worth of drawing area. But you may need a special graphics card to drive it, and you don't get nearly as many colors as with an ordinary VGA monitor.

■ **The use of electronic keys for automobiles could soon let users program their cars in different ways.**

When you stick the digital key into the door lock or the ignition, the car's computer will know instantly who is in the driver's seat because each driver of the car has a unique ID number programmed into the key. That information lets the car's computer automatically retune the radio for a favorite radio station, adjust the heater or air conditioner for the proper temperature, move the inside and rear-view mirrors to the proper angle, and reposition the driver's seat. (One wonders if the owner of the car could program the engine so it would never go faster than a particular speed, should a certain teenager try to floorboard it.)

■ **Violent videogames banned in Brazil!** Following a shooting in a movie theater in Sao Paulo last year, the Brazilian government has banned certain violent videogames from being sold in that country. Police confiscated copies of "Doom," "Postal," "Mortal Kombat," and other software titles from stores, and vendors face the threat of fines if they continue to sell them. Officials think the man who allegedly did the shooting was influenced by a scene from the popular game "Duke Nukem."

■ **Intel's newest microprocessors incorporate a p-n semiconductor junction with one job: to take the chip's temperature.** Since the chips generate a great deal of heat, they must be cooled off if they're expected to work for any length of time. If the CPU's core temperature reaches a certain limit, the internal diode triggers a signal that outside circuitry can use to turn on extra fans, reduce the chip's main clock frequency, or even shut it off completely.

■ **As of late 1999,** American computer users as a whole averaged about one billion Web site hits each day on the Internet.

■ **Ananova, a computer-generated**

female newscaster on the Internet, uses powerful speech and graphics software to read the news in real time. To make Ananova appear more human and realistic, the vocal algorithms make her accentuate certain words and phrases, and she even takes a breath between every few sentences, as real news readers do. Her eyes blink randomly, as well. Her appearance changes according to the tone of the news story: smiling, serious, worrisome, or humorous.

■ **How much data storage can we get?** 75 GB hard drives are already on the market. Within two years, we can expect to see 500 GB drives on the shelves. Within 10 years, you can get a laptop computer with a terabyte's worth of storage -- 1,000 GB!

■ **500 years after he created them, Michelangelo's statues have been digitized in 3-D.** The Digital Michelangelo Project incorporated 30 computer scientists and took almost two years to complete. The team traveled throughout Florence, Italy to take high-resolution, three-dimensional snapshots of the artist's most famous works and create highly realistic models. Even with the high-tech laser scanners, it often took hundreds of scans to accurately record all the nuances and subtle texture changes. The equipment was heavy and time-consuming to set up and take down. More information can be found at <http://graphics.stanford.edu/projects/mich>.

■ **If you can click a mouse, you can decorate a cake.** The joke used to be that you couldn't fit a birthday cake into a typewriter. But with Computer-to-Cake, you can print words, phrases, and even color photographs and other images onto cookies and other pastries through a desktop inkjet printer that uses food coloring instead of ordinary ink, printing the images onto thin sheets of icing on wax paper.

■ **What does your computer do all day?** Usually, it's just sitting there, waiting for you to strike a key or move the mouse. Engineering studies show that 10% of a typical computer program's code makes up 90% of the total execution time. Most software packages released today contain features that the vast majority of users never make use of.

THE WORLD WIDE WEB

■ **AT&T Research Labs has developed a controversial Web tool that permits people to post content online**

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completely anonymous. Called "Publius", the service gives Web posters certain unbreakable secrecy.

Online privacy supporters say it will allow political dissidents, civil libertarians, free speech backers, anti-censorship groups and corporate whistle-blowers to post messages without the possibility of ever being identified.

But individuals concerned about copyright infringement, child porn, music and software file swapping, secret virus release and other illegal activities oppose the technology which allows you to remain unknown.

The new technology works by breaking a file into small pieces, making many different copies of each piece, and then distributing them to many different "volunteer" Web servers. "Publius" contains coded instructions for finding all the pieces but doesn't allow tracking back of the original author.

■ **Is your web browser eavesdropping on you?** It may be if is Netscape. Two New Jersey surfers are beginning a class action suit against America OnLine, the new owner of Netscape. They say that the Netscape browser has a feature secretly imbedded in it that can report your activity online including what you download and your searching profile. A suit has been filed in U.S. District Court in New York claiming that third party spying is contrary to the *Electronic Communications Privacy Act (EPCA)* and the *Computer Fraud and Abuse Act (CFAA)*. The controversial feature loads a unique identifiable "cookie" file on your PC. From that point on, your activities have the capability to be tracked.

■ **The major airlines are banding together to fill up empty seats.** But they are not talking much about it less regular paying passengers flock to the cheap seat sites. What is known is that Delta Airlines has swapped a huge amount of stock (more than \$200 million) with Priceline.com - the "name your own price" website.

Delta is also one of five air lines (the others are United, American, Northwest and Continental) that will be owners of the **www.Orbitz.com** travel planning site now under construction. Besides their own low prices - including last minute pricing - they will offer deals from some 30 air lines. Orbitz (previously code-named T2) is designed to compete with Travelocity.com and Expedia.com, the two sites that account for most online airline ticket sales. It is not clear how Price-

line.com is involved.

Another joint-venture airline web site called **www.Hotwire.com** has been announced by six major air carriers -- including four that are involved with Orbitz. They are United, American, Northwest, Continental, USAir and America West.

Hotwire (first code-named "Purple Demon") is specifically designed to compete with online airline ticket seller Priceline.com. Their strategy is to put more passengers on underbooked flights by offering deep discounts on tickets unlikely to sell at regular prices.

San Francisco-based Hotwire will differentiate itself from Priceline and Microsoft's ticket service, Expedia.com, by selling its deep discounted seats at fixed prices. And unlike Priceline, Hotwire customers will not be obligated to buy the ticket. Priceline.com shares nose-dived by 8% on the Hotwire announcement.

An estimated 3.5 million airline seats aren't filled each week. Priceline has helped the industry attack the problem, but still only sells about 100,000 tickets per week. Both Hotwire and Orbitz are expected to be operational by September.

Traditional travel agencies and their associations are already concerned that they will be further cut out of the revenue stream as the industry migrates to the Web. They charge "...there is the potential for the major airlines to cooperate, collude and engage in all sorts of anticompetitive practices." The Dept. of Transportation and the U.S. Justice Dept. is looking into the planned operation.

■ **The Internet business continues its shake out.** Most of the well known pure Internet stocks are down 50% to 90% from their 52 week highs.

Here are some examples: Amazon down 67%, Ebay down 60%, Egghead down 90%, Etoys down 93%, PlanetRX down 96%, Priceline.com down 70%, Travelocity down 73%, Webvan down 80%, About.com down 71%, AOL down 46%, Ask Jeeves down 91%, CNET down 70%, Excite@Home down 68%, Looksmart down 74%, Lycos down 42%, Mapquest down 49%, NBC Internet down 89%, Sportsline down 79%, Stamps.com down 92%, Switchboard down 81%, Ticketmaster Online down 64%, US Search down 90%, ...Yahoo down 52%.

At some point you have to make a profit and most Internet companies do not. Investors who bought and held IPOs (initial public offerings) and kept the stock have been hurt bad!

■ **Even though the RIAA(Recording**

Industry Assoc. of America) is suing Napster for its music file-sharing program, the Big Five record labels know that they can't stop file swapping even if they put San Mateo-based Napster out of business.

The recording industry is now offering discounted digital downloads. Sony offers 50 songs for online purchase, at \$3.49 per song. But their version is protected with a security feature that prevents unauthorized duplication and distribution. More info at: <<http://www.riaa.com/>>

Napster pointed out in its rebuttal to the RIAA injunction request that Sony markets a portable listening device called the **VAIO Music Clip** that plays MP3 files regardless of whether the files were made with the authorization of the copyright holders.

Napster said it is inconsistent for Sony Music to claim a loss of recording profit while at the same time Sony Electronics is seeking to profit from the vast number of MP3s currently available on the Internet. It added that Sony encourages its customers to "Log-on and download ATRAC3, MP3 or WAV files from your favorite music web sites." The brief can be found at: <<http://www.napster.com>>.

■ **Now comes word that two of the founding investors in Napster are launching AppleSoup,** a digital file-sharing peer-to-peer network that allows content owners to make their files available via the Web and still maintain control of copyright and licensing revenues.

AppleSoup plans to negotiate individual deals with content owners that will allow those owners to share in the fee charged to download a copyrighted file. Any digital file can be included ...including books and movies.

■ **Co-founder Oracle Corp. and the NIC Company has opened a new online store to sell their new \$199 NIC Internet appliance.** It comes with free plug-and-play e-mail and Internet access from NetZero. Or you can also use an existing Internet access account. The NIC - which has no hard disk - operates with a full-range of popular plug-ins including Real Player, Java, Flash and Shockwave.

It is no surprise that the NIC uses no Microsoft software at all. Larry Ellison, Oracle CEO is certainly no Bill Gates fan - so the NIC uses the Linux operating system and a Netscape browser. Other specs include a 266 MHz chip, 64MB RAM, 24X CD ROM, 56K modem, speakers, keyboard and mouse. (The \$129.95 Super VGA 15" Monitor is optional.)

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Researcher International Data Corporation projects the worldwide Information Appliance segment will reach \$17.8 billion and 89 million units by 2004.

Based in San Francisco, the NIC (which stands for New Internet Computer) Company is only six months old. Check: <<http://www.thinknic.com/>>

■ **Wonder why gambling casinos are popping up on Indian reservations?** It is because the federal government considers them to be sovereign domestic governments not subject to federal or state law or taxes! While the casinos don't pay taxes, the Indian people do.

What started out simply as Indian bingo is now very big business. Casino gambling on Indian reservations now accounts for nearly half the gambling revenue of Nevada and Atlantic City, NJ combined. Individual states have no authority to regulate gaming on Indian land if it is permitted outside the reservation.

The *Indian Gaming Regulatory Act of 1988* (IGRA) permits three classes of Indian reservation gaming and requires tribes to negotiate with states concerning games to be played. No state has ever agreed to allow online gambling such as offered in many parts of Europe, Latin America, Australia, Asia and the Caribbean.

■ **Hotels with no guests?** Real estate costs are so high in some cities that it's cheaper for some Internet service providers (ISPs) to rent "rooms" in an "Internet hotel." A separate company can buy an old building, restore and refurbish it, and lease out sections of it to ISPs for their computer equipment. Several ISPs can use different network servers in the same building.

WASHINGTON WHISPERS

■ **A House bill that would ban online gambling failed to pass.** The bill would have banned online wagers on sporting events and casino games, as well as the sale of lottery tickets online but not horse and dog racing or jai alai.

The legislation would have required U.S. Internet service providers to block access to gambling sites but did not hold them liable if they failed to do so. Although passed by the Senate last November, the measure was strongly opposed by the Clinton administration.

The Internet gambling industry had invited the government to regulate it, even tax it, while insisting that outright

prohibition was unwise and unworkable given the Web's global reach.

Nearly 700 Internet sites offer online gambling, a business expected to grow from \$1.1 billion in 1999 to \$3 billion in 2002, according to a recent report for the online gambling industry. A recent phone survey of Internet users found that 1 million Americans gamble online each day, and that 4.5 million Americans - about 5 percent of those with Web access - have gambled online. (Reported by the Associated Press and others.)

■ **Is cable-delivered Internet access a cable or telecom service.** The distinction is critical because the FCC requires telecom carriers to open their networks to competitors.

The FCC said that it will be taking another look at whether cable companies (such as AT&T Cable Services) should open their high-speed networks to multiple Internet providers.

The U.S. Court of Appeals for the 9th Circuit ruled that local communities do not have the authority to require cable companies to open their networks to ISPs other than their affiliated cable-modem services. The court ruled that high-speed Internet over cable is a telecommunications service. The court also said there needs to be a national policy concerning this issue.

■ **On July 3rd, the House passed a spending bill that would reduce the FCC's budget by some \$2 billion.** The Republican-led Congress wants to limit the FCC's ability to tamper with telecommunications policy. Salaries and expenses in the FCC's Legislative Affairs Office were particularly hard hit. On July 5th, the House passed still more anti-FCC legislation.

The strain on the Commission (appointed by the Democratic administration) from Congress is not new. Responding to opposition and pressure from the powerful *National Association of Broadcasters*, Congress is particularly infuriated by the FCC's intent to create up to 1,000 low power community FM stations. Their response is to slash Commission funding. But the FCC is plowing ahead anyway with its plan anyway.

■ **Scientists at the Intelligent Systems and Robotics Center at Sandia National Laboratories are developing trained "Intelligent Cyber Agents" to police the Internet.**

Their job is to recognize and kill viruses, worms, trojan horses and other invaders before they do damage. The

"bots" (short for "robot") use sophisticated pattern-recognition reasoning to take action against such viruses as the Melissa and "I-Love-You" worms long before they get as far as your email or computer.

Sandia is a national security laboratory operated for the U.S. Department of Energy. It performs a wide variety of research and development projects and works on assignments designed to protect America's infrastructures against emerging national security threats -- both military and economic.

■ **Is there life in your garden?**

NASA is trying out a new series of wireless sensors designed to look at climates on alien worlds. In an effort to see how well they'll work, scientists are planting the sensors in ordinary gardens here on Earth. The sensors connect to each other through radio waves, exchanging information on temperature, moisture, and other conditions and relay it all to an orbiting satellite. A wide web of such sensors can examine the climate of a large region of a planet in detail, and provide data that satellites alone cannot.

AMATEUR RADIO

■ **Australian amateurs are not happy that their government is to auction spectrum in the 9-cm band.** The ACA (Australian Communications Authority) will sell 100 MHz of 3.4 GHz spectrum - currently allocated to Radiolocation (radar) but shared by their Amateur Service. Impacted will be their National calling frequency at 3456.1 and an EME sub band at 3456.0 to 3456.1 Ghz.

■ **Radioamateurs in Australia were officially notified (via a notice in their Federal Gazette) that they may not operate their 70-cm ham radio equipment between 440 and 450 MHz within 100 miles of the Sydney Olympic Park between July 12, 2000 until October 30, 2000.** The restriction lasts until December 31st in the 421 to 432 MHz frequency band.

The rumors are that a similar 70-cm ham band restriction will be made during the Salt Lake City (Utah) XIX Winter Olympics to be held February 8 to 24, 2002. The 2002 Winter Olympic Games have been designated a National Special Security Event. The FBI has asked for a FY 2001 appropriation totaling more than \$1 million to support interagency training exercises and the acquisition of telecommunications and related equipment.

DIRTY TRICKS IN IARU REGION ONE

Conference leadership attempts to change agreement on Amateur Radio qualifications to include telegraphy proficiency.

Last September, the IARU Region One held their triennial Conference in Lillehammer, Norway. It was attended by more than fifty national Amateur Radio societies across Europe and Africa. Also in attendance was Robert Jones VE3CTM, Director of the ITU's Radiocommunication Bureau, Thormod Boe LA7OF, head of the E.R.O. (the European Communications Office) ...as well as IARU President Larry Price W4RA, Richard Baldwin W1RU, IARU President Emeritus and Dave Sumner K1ZZ, IARU Secretary. The ARRL was represented by Paul Rinaldo W4RI and then ARRL President Rod Stafford, W6ROD. The American Radio Relay League basically heads up the International Amateur Radio Union.

Mr. Jones talked about the current pressures on the frequency spectrum, and about the potential threat to scientific/non-commercial services. He acknowledged that the Amateur Radio Service had presented good arguments for the retention of its spectrum, and paid tribute to the hard work done by the IARU.

The biggest delegation was from DARC/Germany which sent 14 representatives. The Radio Society of Great Britain sent 12 delegates including their president Don Beattie, G3OZF. The IARU Conference Chairman was Louis van de Nadort, PA0LOU.

One of the issues covered at the Lillehammer conference was consideration of an ITU set of Amateur Radio operator qualifications. The proposed draft new recommendation (PDNR - previously called M-XXX) contains the technical and operational requirements for an amateur license rather than attempting to spell these out in Article S.25 of the Radio Regulations. The new recommendation is called: M-AOQ for "Mandatory Amateur Operator Qualifications."

The new qualifications was considered at Lillehammer by Committee C3. The greater majority of those in attendance voted in favor of eliminating Morse as a requirement for an HF license. The final IARU Region 1 agreement concluded that the S.25 requirements should contain the following qualification elements:

Radio Regulations and Licensing Conditions
Interference
Operating skills
EMC
Safety
Theory of Electronic Circuits and Devices
Transmitters
Receivers
Antennas

Propagation
Modes of Communication
Measurements

The IARU Administrative Council voted in favor of the same set of operator qualifications. Strangely, however, the proposed recommendation to be submitted for consideration by ITU Working Party 8A, was mysteriously reworded as follows:

Preliminary Draft New Recommendation

The ITU Radiocommunication Assembly,
considering
a.) that No. S1.56 of the Radio Regulations (RR) defines the amateur service as: A radiocommunication service for the purpose of self-training, intercommunication and technical investigations carried out by amateurs, that is, by duly authorized persons interested in radio technique solely with a personal aim and without pecuniary interest;
b.) that No. S1.57 (RR) defines the amateur-satellite service as: A radiocommunication service using space stations on earth satellites for the same purpose as those of the amateur service;
c.) that certain minimum operator operational and technical qualifications are necessary for proper operation of an amateur or amateur-satellite station,
recommends
1. that administrations should take such measures as they judge necessary to verify the operational and technical qualifications of any person wishing to operate an amateur station;
2. that any person seeking a licence to operate an amateur station should demonstrate knowledge of:

Radio Regulations
International
Domestic
Operating skills
radio telephony
radio telegraphy
data and image
Radio system theory
transmitters
receivers
antennas and propagation
measurements
Radio emission safety
Electromagnetic compatibility
Avoidance and resolution of radio frequency interference

This new version differed from both the AC Resolution and the Region 1 Conference decisions at Lillehammer in a number of ways. For example: it omitted reference to "Licensing Conditions" and "Modes of Communication" and expanded the definition of "Operating Skills" to include radio telegraphy. Although radio telegraphy includes more than "Morse," it became apparent that someone wants to make sure that CW proficiency is

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included as an Amateur Radio operator requirement - even though the Region 1 delegates specifically voted that it should be dropped.

According to Radio Society of Great Britain President Don Beattie G3OZF, the decision of the Lillehammer Region 1 Conference was **not** to include reference to Morse in the requirements in M-AOQ, the so-called mandatory recommendations (...an oxymoron if there ever was one.)

"The Conference felt strongly that a mandatory Morse testing requirement was not consistent with modernizing the image of amateur radio," Beattie said. "The RSGB believes the words 'radio telegraphy', added under 'Operating Skills' in the draft recommendation are capable of misinterpretation."

It appears that now the Chairman of Region 1, PA0LOU (from the Dutch VERON Amateur Radio Society) may have taken it upon himself to reword the proposed Amateur operator qualification draft to include radio telegraphy proficiency as a requirement for an HF Amateur license. He may have received input from the IARU. According to G3OZF, PA0LOU insists that there was a ballot taken in Lillehammer to retain radio telegraphy, but no one in attendance at the meeting is aware of any such vote. All conference papers show an agreement in favor of eliminating Morse.

Don Beattie maintains that after the IARU Region 1 position was developed, the Conference discussed the content of the M-AOQ recommendation and agreed "no Morse." He said he was "...surprised that VERON maintains that retention of radio telegraphy was voted for at Lillehammer." He said there was no such vote. The RSGB has now dashed off the following letter:

To: Member Societies in Region 1 IARU
From: Don Beattie, President, Radio Society of Great Britain

July 5th 2000

Dear Colleague,

IARU Region 1 EC request for input on draft PDNR M-AOQ

You will have received a request from Region 1 Chairman PA0LOU to comment on the draft form of the Preliminary Draft New Recommendation reference M-AOQ. For those of you who were at the Lillehammer Region 1 Conference, you will recall discussion on this matter under paper 3.17, which was subsequently approved by the Conference.

When this paper was debated, a lot of time was spent discussing the relevance of mandatory Morse testing for an HF license. In the end, Conference decided that mandatory Morse testing was not relevant for an HF licence in the future, and the content of the agreed M-XXX paper reflected this. M-XXX is now referred to as M-AOQ.

Since the Region 1 Conference, you will be aware that the Administrative Council of the IARU has also voted in favour of the identical wording for M-XXX as the Lillehammer deci-

sion.

At an informal international meeting at the Friedrichshafen "Ham Radio 2000" event two weeks ago, it became apparent that a document was in circulation, and had indeed been submitted to the ITU, which differed in several material respects from the papers agreed at the two Lillehammer meetings. Member Societies in Region 1 had not been given the opportunity to comment on this document until the last few days.

The RSGB has a number of concerns about the draft PDNR. In particular, the Society is very concerned that the words "radio telegraphy" have been added under "Operating Skills". Whilst the international definition of radio telegraphy is broader than simply Morse, the RSGB believes that these words in the PDNR are capable of misinterpretation, and should be removed.

I am therefore sending you for information the formal RSGB response to the Region 1 request for input. I hope this may be of interest to you.

With best wishes,
Don Beattie, G3OZF
President, RSGB.

The RSGB is asking the Executive Committee of Region 1 of the IARU and the Administrative Council of IARU "...to adhere to the decisions agreed at the Lillehammer Region 1 Conference and in AC Resolution 99-1 by returning to the original list."

"Most particularly, the RSGB formally asks, in returning to the original Lillehammer decisions, that no further amplification be included in the 'Operating Skills' section through inclusion of words such as 'radio telegraphy', which are capable of misinterpretation," G3OZF said.

"In this respect, the RSGB asks for confirmation that it is not the intention to seek, through the wording of M-AOQ, the continuation of the requirement for mandatory Morse testing for an HF amateur license."

The previous IARU Region conference (held in Tel Aviv in 1996) concluded that Morse should remain as a requirement for an HF license. Delegates at the Lillehammer meeting expressed surprise that PA0LOU had decided that the Region 1 position should be to retain radio telegraphy as a requirement as they had no recollection of the Tel Aviv resolution on this matter being endorsed at Lillehammer. Quite the contrary, it was decided that it should not be endorsed. There are those who feel that the Amateur Operator Qualifications are being 'manipulated.'

The IARU AC (Administrative Council) meets in September to nail down the final recommendation which is to be the IARU Amateur Radio qualification proposal. Fortunately, the outline is only a draft and can be changed. We will have to see what happens here.